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Salt River  
Valley  
Water Users  
Association

Arizona  
Department of  
Water  
Resources

STA/STA

# Water Supply Outlook for Arizona

## Federal-State-Private Cooperative Snow Surveys

MAY 12 1983

CLERK OF COURT  
JUDICIAL DEPARTMENT  
COUNTY OF MARICOPA  
ARIZONA



APR. 1, 1983



*Issued by*

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COVER PHOTO - Fresh powder snow  
on Elephant Mountain, near West  
Fork of Hyalite Creek, Montana



APRIL 1, 1983

THE FORECAST FOR ABOVE NORMAL SURFACE WATER SUPPLIES IN  
1983 CONTINUES TO HOLD FOR ARIZONA.

**WATER SUPPLY:** The forecast for above normal surface water supplies in 1983 continues to hold for Arizona. Watershed conditions on April 1 indicate much above average streamflow for the period April 1 through May 31. Streamflow forecasts predict an inflow of 740,000 acre-feet to the Salt River Project over this two-month period. The Salt River is forecast to produce 312% of average discharge. The Verde River and Tonto Creek are forecast at 277% and 278% of average flow. On the Gila River the flow is expected to be 343% of average at the Head of Safford Valley and 282% of average at Virden, New Mexico. The San Francisco River at Clifton is forecast at 324% of normal. The inflow to San Carlos Reservoir at Calva is forecast at 135,000 acre-feet, which is nearly 400% of average. Streamflow on the upper Little Colorado River is anticipated to be 187% of average at Greer and 245% of average above Lyman Reservoir.

**SNOW COVER:** The snowpack in central Arizona and southwestern New Mexico increased dramatically as a result of the storms during the last half of March. The overall snowpack on the Verde Watershed was 282% of average; on the Salt River, 295% of average; on the Gila-San Francisco drainage, 288%; and 226% on the upper Little Colorado River.

On April 1 the general snow level was about 7000 feet and the snow was melting. Snotel sites as high as 9000 feet elevation have recorded snow water discharge. The cool weather beginning April 3 has slowed the melting processes, but it will soon resume.

**PRECIPITATION:** Above average precipitation was recorded generally over the state throughout the month of March. The periods March 8-13 and 27-31 were the only extended periods without significant precipitation. Total monthly precipitation at high elevation gages ranged from 2.6 inches at Greer Lakes to 13 inches at Workman Creek in the Sierra Anchas. Most stations recorded precipitation between 3 and 8 inches.

**STREAMFLOW:** Runoff in March was very heavy. Most runoff was the result of heavy rain, but some low elevation snow melted and added to the streamflow. Inflow to the Salt River Project reservoir system was reported to be 752,500 acre-feet. Water releases at Granite Reef Diversion Dam amounted to 484,000 acre-feet as the Salt River continued to flow through Phoenix. As of April 1, 1,035,000 acre-feet of water has been released past Granite Reef since December 1982. The Gila River also delivered high runoff to the Head of Safford Valley -- 207,900 acre-feet for the month.

The following percentages of average illustrate the March runoff regime.

STREAMFLOW:  
(Continued)

<u>Stream</u>	<u>MARCH 1983</u>	
	<u>Volume</u> <u>1000's Ac-Ft.</u>	<u>% of Average</u>
Salt River	324.3	383%
Tonto Creek	164.5	1040%
Verde River	263.7	445%
Gila River - Solomon	207.9	475%
Gila River - Virden	73.4	319%
San Francisco River - Clifton	92.3	448%

RESERVOIR  
STORAGE:

The six reservoirs of the Salt River Project held a total volume of 1,948,000 acre-feet on April 1. This is 96% of capacity. In order to prevent over filling in March, water releases were necessary. Releases during March reached a maximum of 20,000 cfs on March 25. By April 1 the rate was reduced to 12,000 cfs and by April 4 it was down to 7500 cfs. Due to the forecast inflow volume, continued releases will be necessary.

Lake Pleasant is full, with 157,500 acre-feet. On April 1 water was being released at a rate of 500 cfs. A maximum release rate was made on March 4 at 8000 cfs. Painted Rock Dam reported an April 1 storage of 567,000 acre-feet. Water was being released at 3200 cfs.

San Carlos Reservoir was 62% full on April 1, with a storage of 581,000 acre-feet. Storage in this reservoir has increased dramatically from the 58,000 acre-feet reported on October 1, 1982. The four major Colorado River reservoirs are holding a combined storage of 49,523,000 acre-feet at 92% of capacity.

Both Watson Lake and Willow Lake near Prescott are reported to be full since mid-March. Upper and Lower Lake Mary near Flagstaff are full and spilling.

Show Low Lake has been full since mid-March and is spilling.

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ARIZONA IS ENTERING THE HIGH WATER USE PORTION OF 1983 WITH AN EXTREMELY GOOD WATER SUPPLY OUTLOOK. THE ONLY WATER SHORTAGES ANTICIPATED ARE IN THOSE AREAS WHICH ARE ALWAYS DEFICIENT.



ABOUT  
**STREAMFLOW FORECASTS**    APRIL 1, 1983

STREAMFLOW FORECASTS		APRIL 1, 1983		THIS YEAR		PAST RECORD	
BASIN, STREAM and/or FORECAST POINT		FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET		
		Thousand Acre Feet	Percent of Average		Last Year	Average †	
<u>SALT RIVER DRAINAGE</u>							
Salt near Roosevelt		575	312	Apr-May	184.2	168.3	
"		380	331	April	114.8	103.8	
Tonto Creek near Roosevelt		35	278	Apr-May	12.58	12.90	
"		28	300	April	9.33	10.17	
Verde River above Horseshoe		130	277	Apr-May	47.0	82.6	
"		112	325	April	34.5	66.5	
Total Salt River Project Streams		740	304	Apr-May	243.8	263.8	
"		520	328	April	158.6	180.5	
<u>GILA RIVER DRAINAGE</u>							
Gila River at Calva		135	399	Apr-May	24.9	33.8	
Gila River near Gila		59	261	Apr-May	22.23	22.62	
Gila River near Solomon		175	343	Apr-May	57.0	51.0	
"		130	401	April	32.5	32.4	
Gila River near Virden		72	282	Apr-May	33.36	25.53	
Frisco River at Clifton		92	324	Apr-May	18.89	28.35	
Frisco River near Glenwood		44	308	Apr-May	8.36	14.27	
<u>LITTLE COLORADO RIVER DRAINAGE</u>							
Little Colorado River above Lyman Dam		21.5	245	Apr-June	---	8.78	
Greer		11.8	187	Apr-June	---	6.30	
<u>GRANITE CREEK DRAINAGE</u>							
Granite Creek		.8	---	Apr-May	---	---	
Willow Creek		.6	---	Apr-May	---	---	
<u>MIMBRES RIVER DRAINAGE</u>							
Mimbres River near Mimbres		8.0	---	Apr-May	.83	---	
<u>COLORADO RIVER DRAINAGE</u>							
Virgin River near Littlefield		120	250	Apr-June	42.5	47.9	
Lake Mary Inflow		4.6	213	Apr-May	---	2.16	
† Based on 15-year period, 1963-77							
* Average for less than 15 years.							

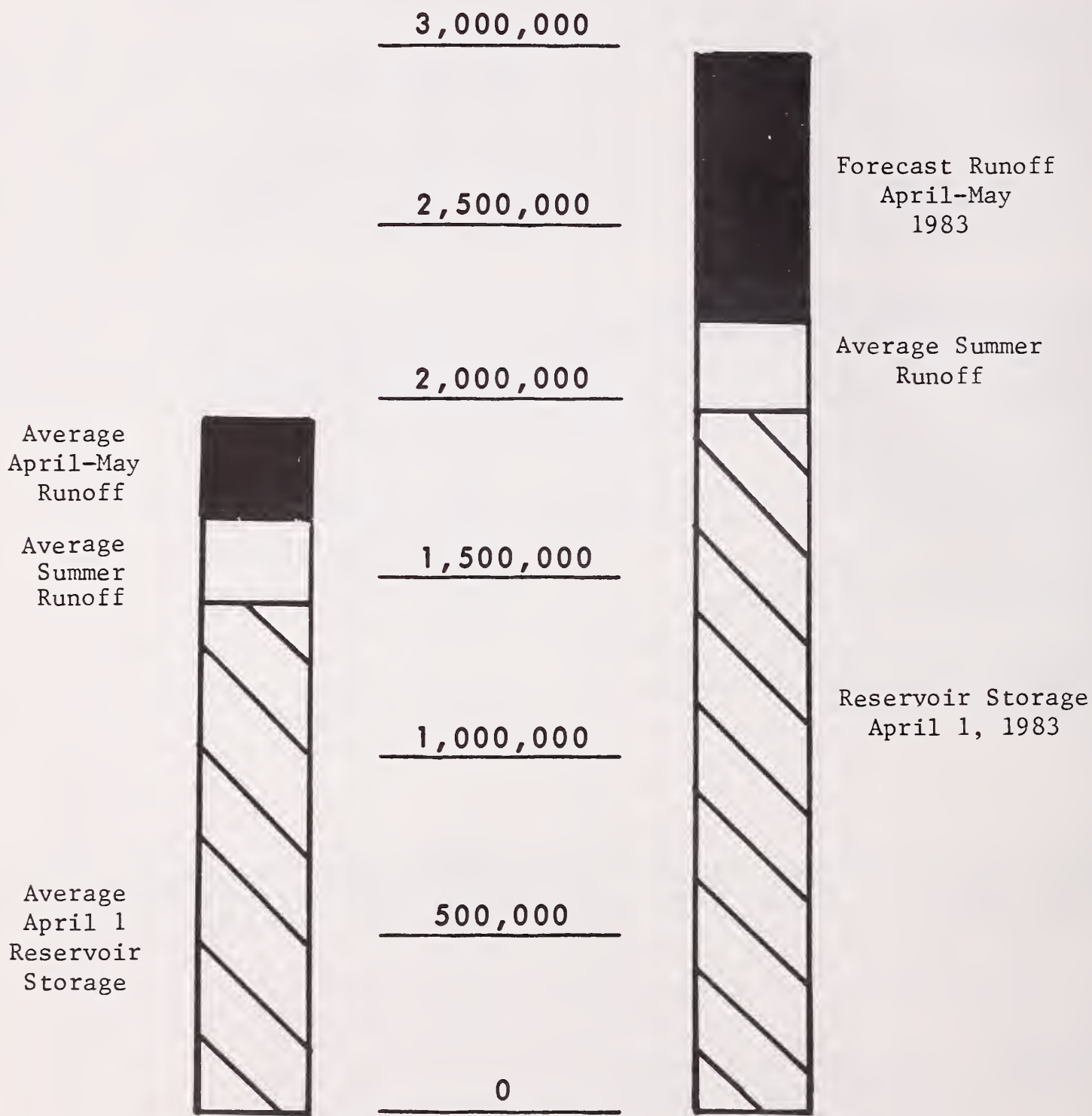
† Based on 15-year period, 1963-77  
 \* Average for less than 15 years.

# WATER SUPPLY INVENTORY SALT RIVER VALLEY SYSTEM

IN ACRE-FEET

AVERAGE WATER SUPPLY  
APRIL 1

ANTICIPATED WATER SUPPLY  
APRIL 1, 1983



Based on Present Storage + Forecast Spring Runoff + Average Summer Runoff



## RESERVOIR STORAGE (Thousand Acre Feet) APRIL 1, 1983

BASIN or STREAM	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average†
GILA RIVER DRAINAGE					
Agua Fria	Lake Pleasant	157.6	157.5	97.8	78.6
Granite	Watson Lake	4.7	4.7	4.6	3.3
Granite	Willow Creek	6.1	6.1	6.1	2.9*
Gila	Painted Rock Dam	2,492.0	567.0	3.4	-
Gila	San Carlos	935.0	581.0	276.2	261.3
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1,709.0	1,652.0	1,436.4	1,251.0
Verde (2)	Bartlett & Horseshoe	309.6	296.0	301.9	148.8
Salt & Verde	6 Salt River Project Reservoirs	2,019.0	1,948.0	1,738.3	1,399.8
COLORADO RIVER DRAINAGE					
Colorado	Lake Havasu	619.4	568.0	561.1	557.4
Colorado	Lake Mohave	1,810.0	1,714.0	1,677.0	1,667.0
Colorado	Lake Mead	26,159.0	24,638	23,380	17,302.0
Colorado	Lake Powell	25,002.0	22,604	19,641	10,069.0
Little Colorado	Lyman	-	-	15.2	16.9
Little Colorado	Show Low Lake	5.1	5.1	1.4	2.3
† Based on 15-year average, 1963-77					
* Average is for less than 15 years of record					

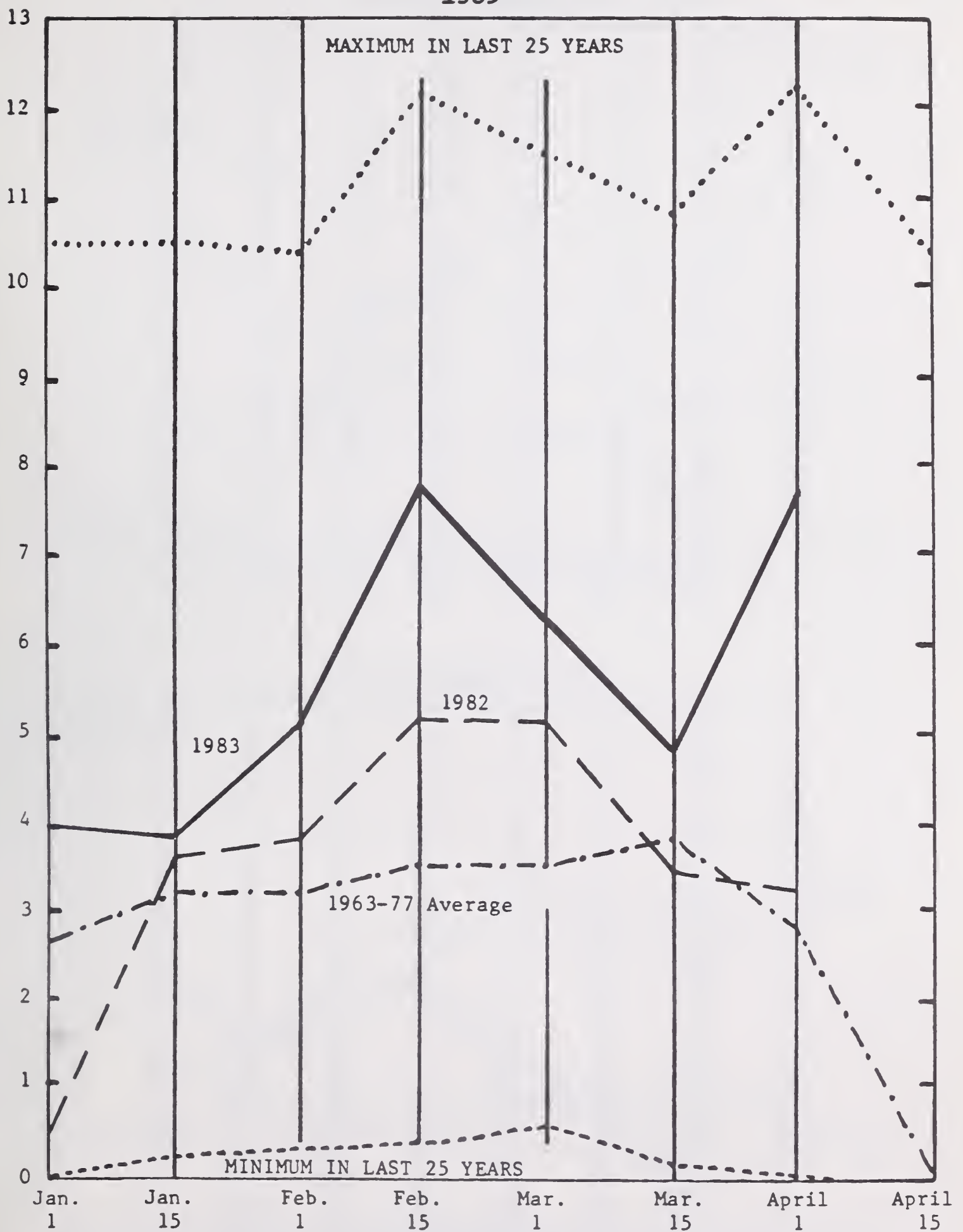
**SUMMARY of SNOW MEASUREMENTS** (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
<u>ABOUT MARCH 15, 1983</u>			
Gila	10	190	190
Salt	10	156	150
Verde	10	122	157
Little Colorado	5	124	124
<u>ABOUT APRIL 1, 1983</u>			
Gila	10	271	288
Salt	10	256	295
Verde	10	163	282
Little Colorado	5	160	226

# ARIZONA

## AVERAGE SNOW COVER

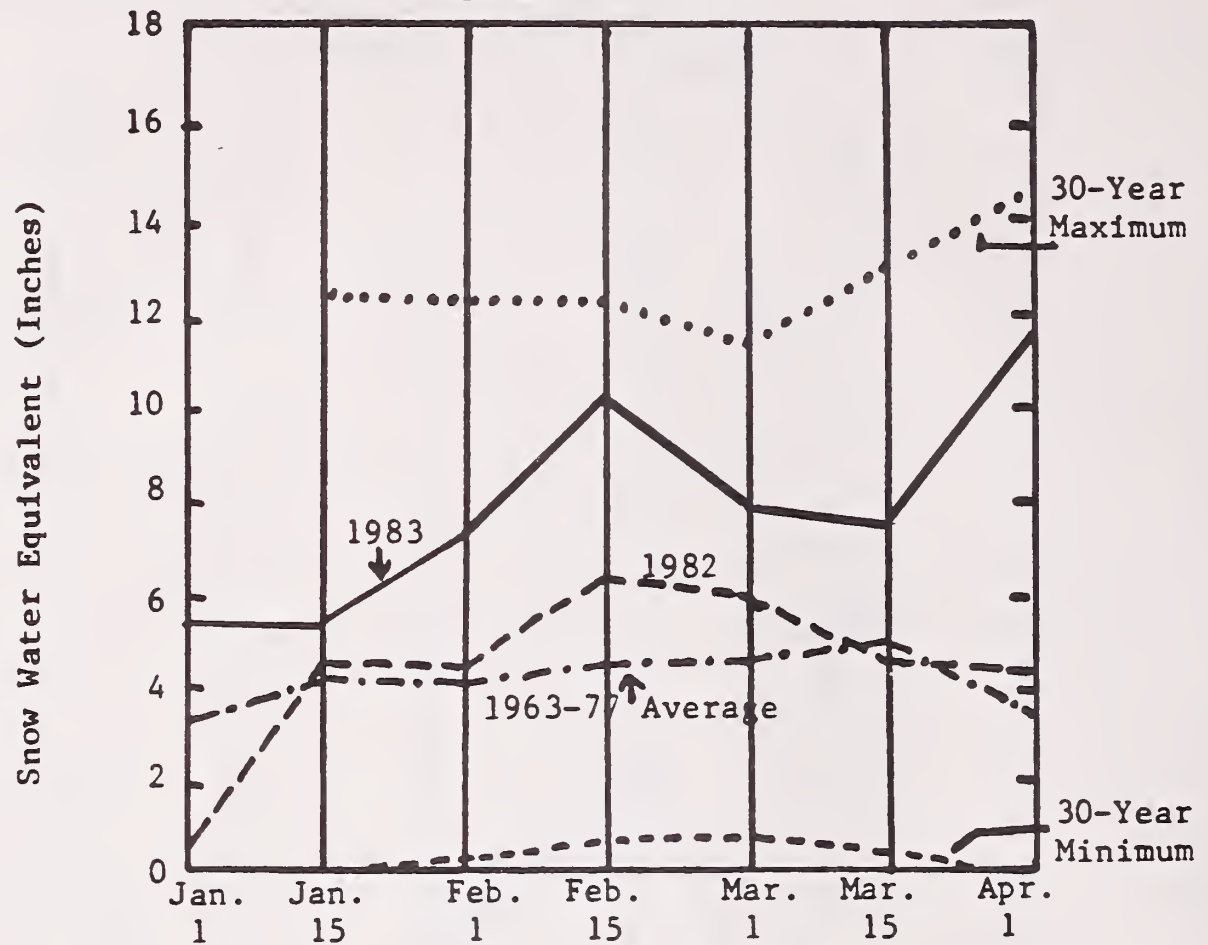
1983



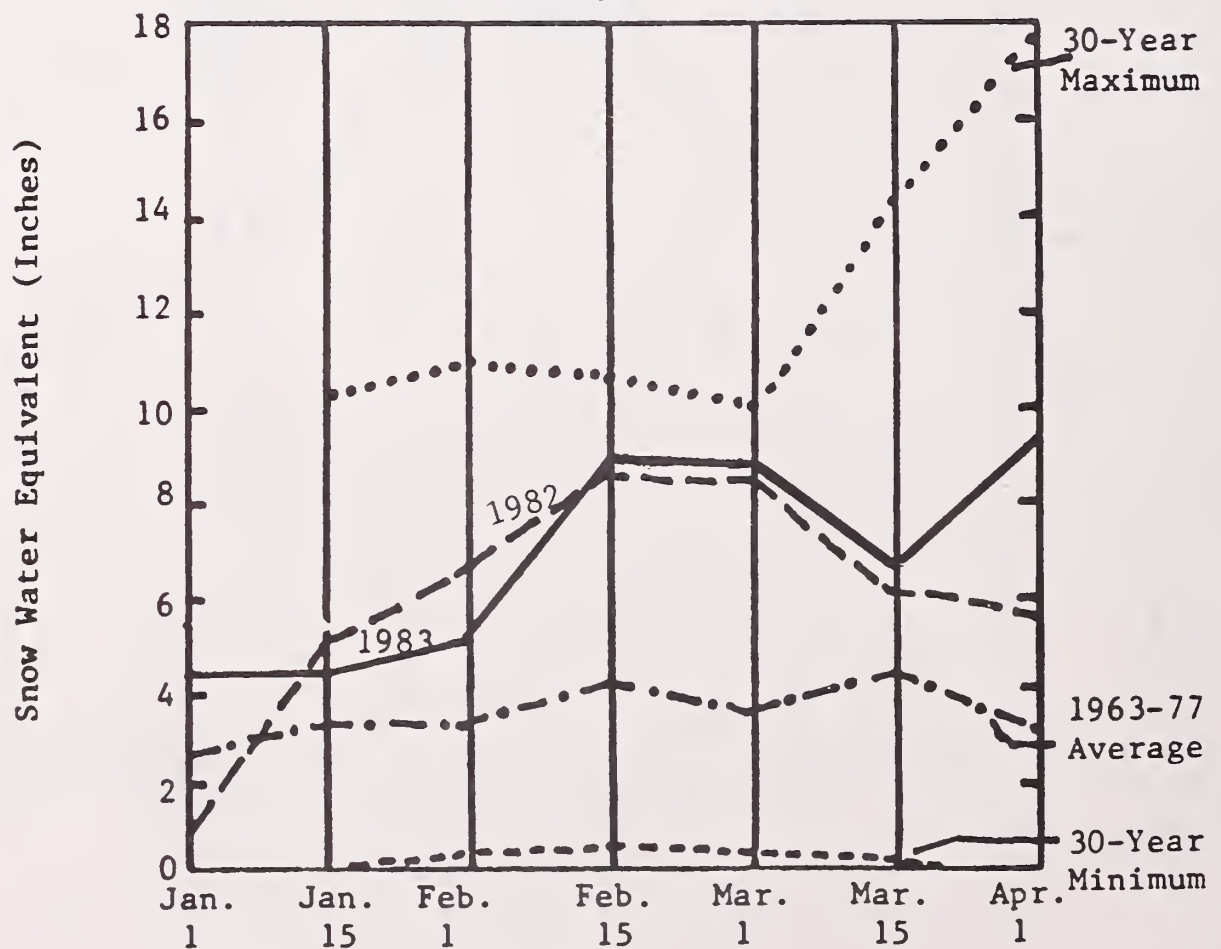


# WATERSHED SNOW COVER

## SALT RIVER



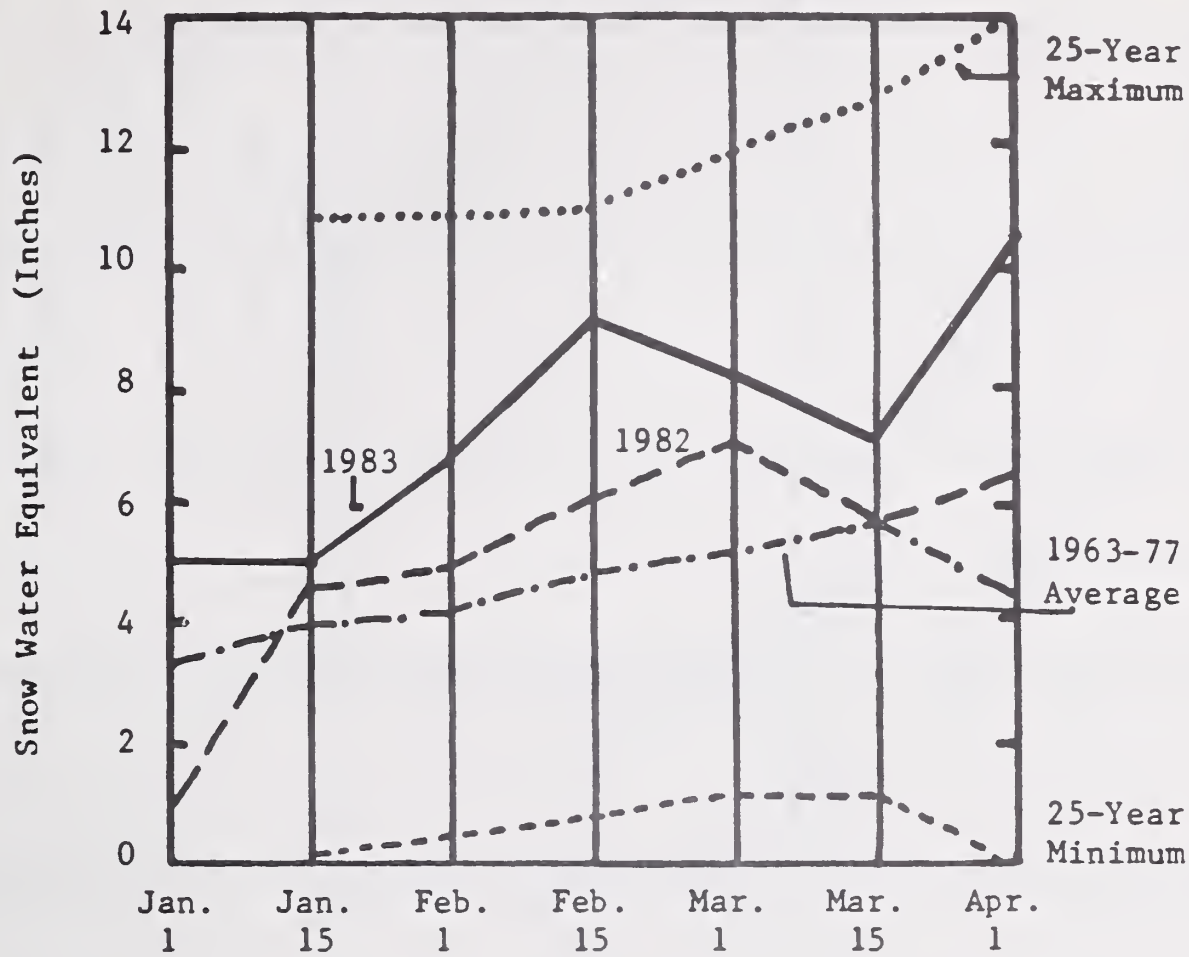
## VERDE RIVER



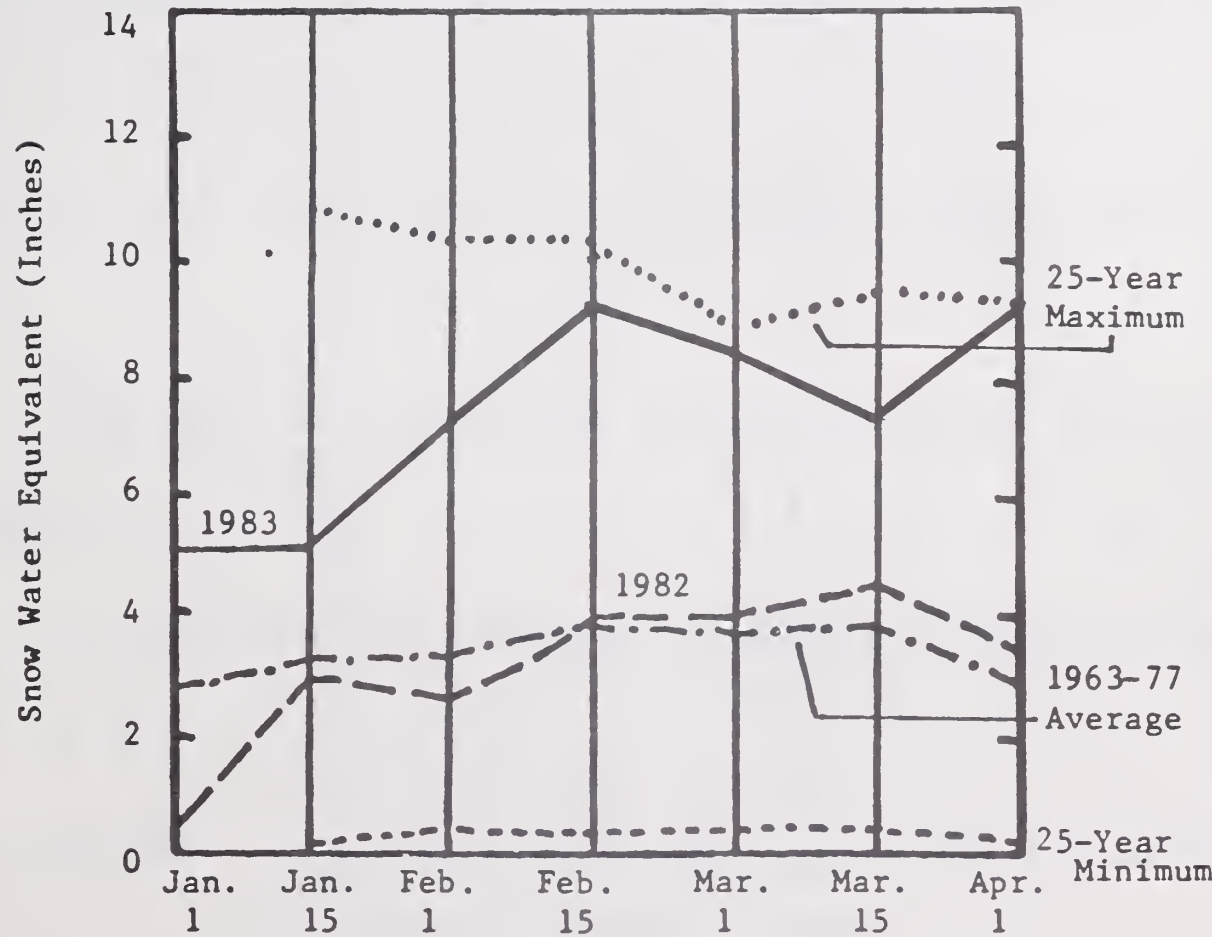
# WATERSHED SNOW COVER

1983

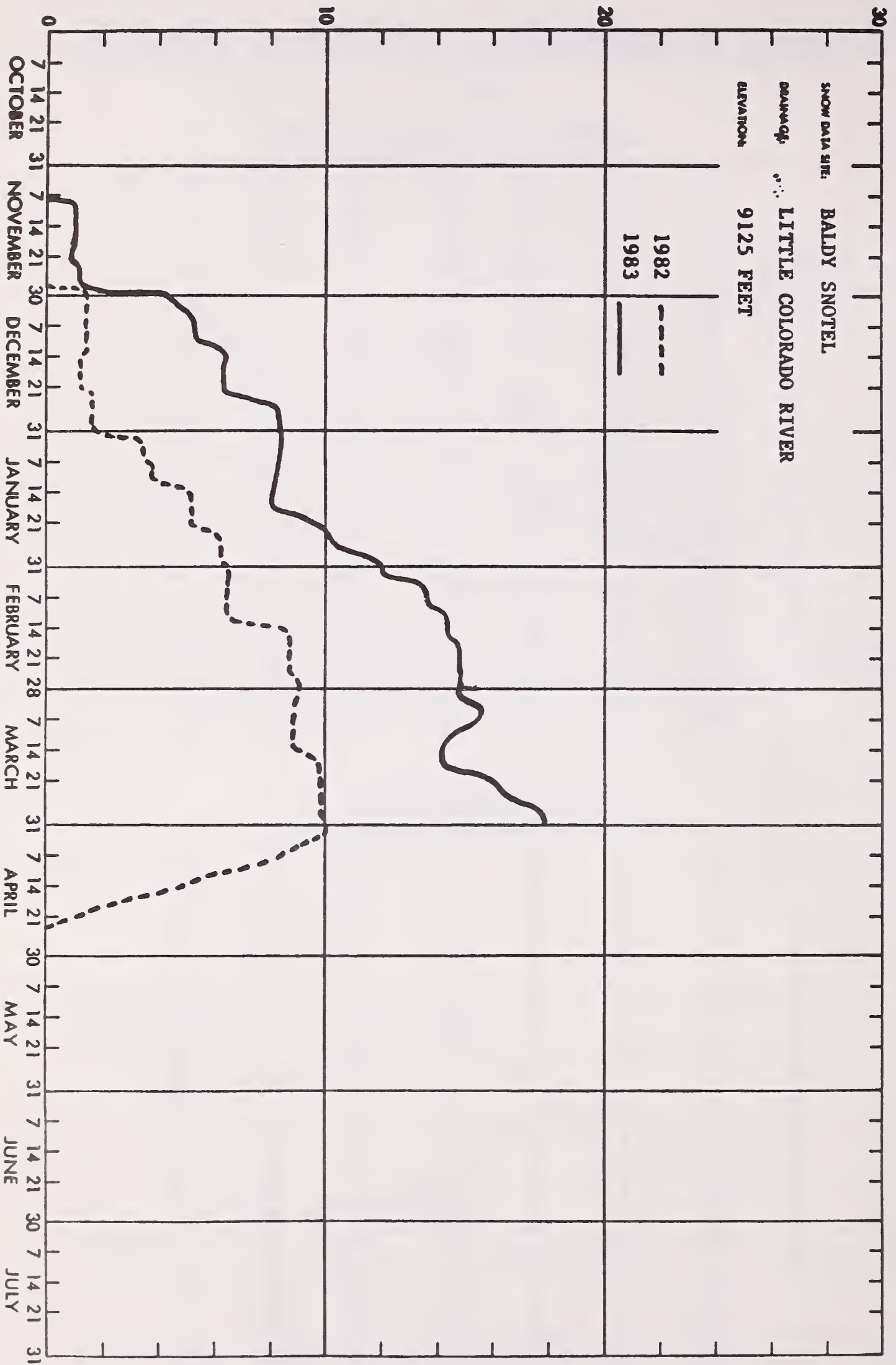
## LITTLE COLORADO RIVER



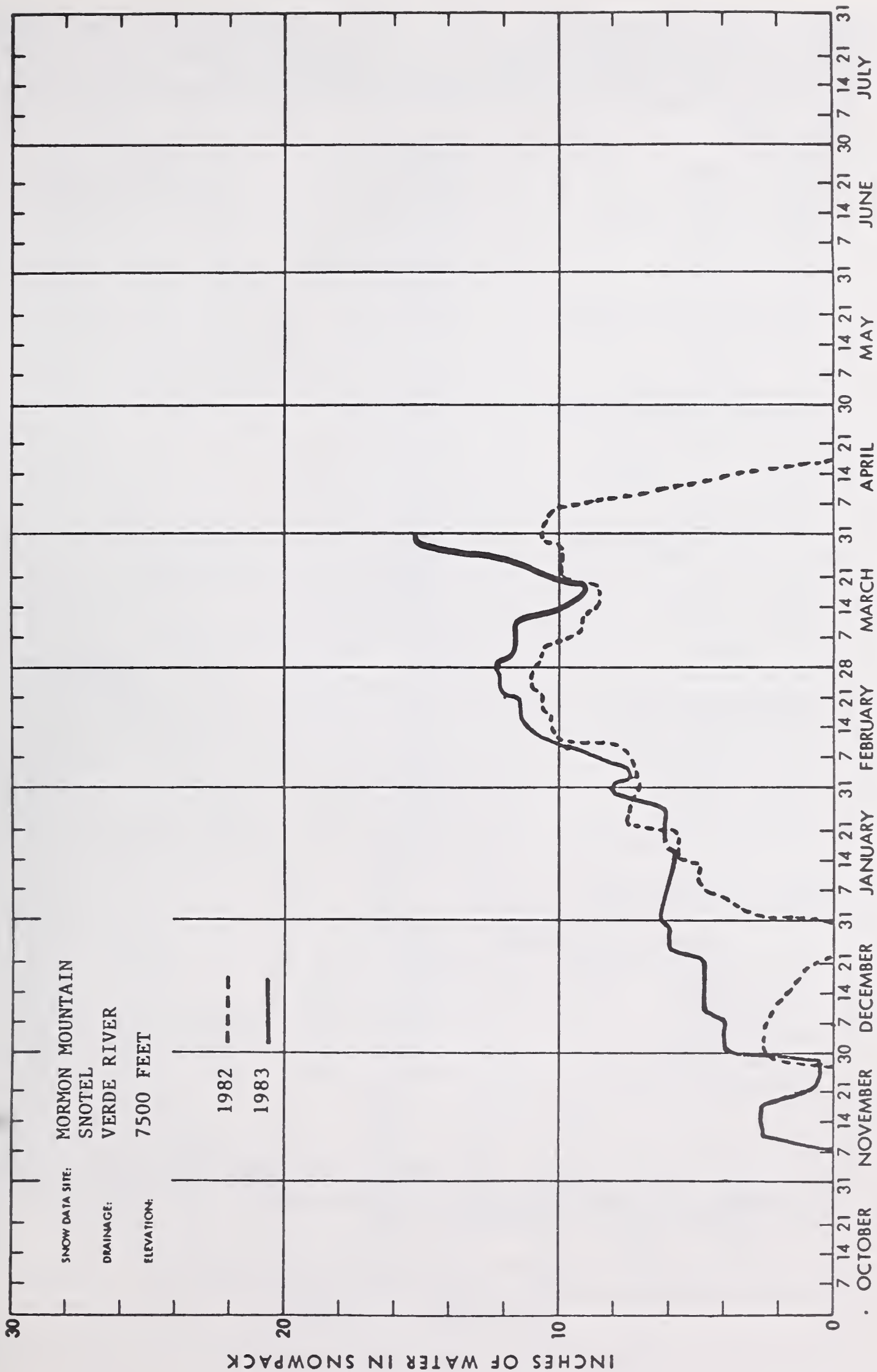
## GILA RIVER



# INCHES OF WATER IN SNOWPACK







# SNOW

ABOUT APRIL 1, 1983

SNOW		ABOUT APRIL 1, 1983		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)			
NAME	Elevation				Last Year	Average †		
SALT RIVER								
Baldy *	9220	3/30	46	16.8	8.9	6.0		
BALDY SNOTEL	9220	4/1	--	17.9	9.8	--		
Beaver Head	8000	3/30	19	6.4	0.2	1.6		
BONITA ROCK SNOTEL	8270	---	--	---	13.1	--		
Canyon Creek	7500	3/31	15	4.8	0.4	2.2		
Canyon Point	7600	3/31	20	7.1	0.0	2.3**		
Coronado Trail	8400	3/30	17	6.1	0.0	1.3		
CORONADO TRAIL SNOTEL	8400	4/1	--	4.2	0.0	--		
Forest Dale	6430	N O	S U R V	E Y	0.0	0.2		
Ft. Apache	9160	3/30	50	15.8	8.4	6.3		
Hannagan Meadows	9090	3/30	67	24.8	12.7	8.4**		
HANNAGAN MEADOWS SNOTEL	8960	4/1	--	25.8	12.9	--		
Hawley Lake	8250	N O	S U R V	E Y	10.7	4.4**		
HAWLEY LAKE SNOTEL	8250	---	--	---	10.9	--		
Heber	7640	3/30	14	5.4	0.9	2.3		
HEBER SNOTEL	7640	4/1	--	4.6	0.4	--		
Maverick Fork	9050	3/30	57	22.2	11.0	7.6		
MAVERICK FORK SNOTEL	9200	4/1	--	21.1	9.4	--		
McNary	7225	N O	S U R V	E Y	0.0	1.1		
MCNARY SNOTEL	7225	---	--	---	0.0	--		
Milk Ranch	7000	N O	S U R V	E Y	0.0	0.7		
Mt. Ord (A)	11000	N O	S U R V	E Y	32.4	26.7**		
Nutriososo *	8500	3/30	8	2.3	0.0	0.9		
Promontory Butte	7900	3/31	75	28.5	19.2	10.7**		
PROMONTORY SNOTEL	7900	4/1	--	33.2	---	--		
Smith Cienega (A)	9850	N O	S U R V	E Y	26.3	20.9**		
Sunrise Summit	10600	N O	S U R V	E Y	21.9	15.8**		
Wilson Lake	9000	N O	S U R V	E Y	15.2	8.9**		
Workman Creek	6900	3/30	37	13.7	2.8	3.2		
WORKMAN CREEK SNOTEL	6900	4/1	--	17.1	0.0	--		
LOWER COLORADO RIVER								
Bill Williams Intermediate	8550	4/4	59	21.8	---	8.6**		
Bill Williams Summit	8950	4/4	75	27.8	---	11.6**		
Bright Angel	8400	3/30	62	21.1	---	--		
Chalender *	7100	3/30	7	1.4	2.6	1.6		
Fort Valley	7350	3/30	8	2.7	0.4	1.3		
Grand Canyon	7500	3/30	7	2.6	0.0	1.1		
Williams Ski Run	7720	3/30	51	16.2	17.2	7.8**		
† 1963-77 15-year period. (*) Adjacent drainage. (**) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is preliminary. E = Estimate.								

# SNOW ABOUT APRIL 1, 1983

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<u>GILA RIVER</u>						
Bear Wallow	8100	LATE REPORT			0.4	2.8
Beaver Head	8000	3/30	19	6.4	0.2	1.6
Coronado Trail	8400	3/30	17	6.1	0.0	1.3
CORONADO TRAIL SNOTEL	8400	4/1	--	4.2	0.0	--
Emory Pass #2 *	7800	3/30	4	1.4	0.0	0.3**
Frisco Divide	8000	3/30	11	3.0	0.4	0.9
FRISCO DIVIDE SNOTEL	8000	4/1	--	0.0	0.0	--
Hannagan Meadows *	9090	3/30	67	24.8	12.7	8.4**
HANNAGAN MEADOWS SNOTEL	8960	4/1	--	25.8	12.9	--
Hummingbird (A)	10550	3/29	96	32.6	24.3	15.7**
LOOKOUT MOUNTAIN SNOTEL	8150	4/1	--	0.0	0.0	--
McKnight Cabin * (A)	9300	3/29	33	12.7	2.8	3.2**
Mogollon	7000	N O	S U R V E Y		0.0E	0.1
Nutrioso *	8500	3/30	8	2.3	0.0	0.9
Redstone Trail	8600	N O	S U R V E Y		9.1E	6.5
Rose Canyon	7300	LATE REPORT			0.0	0.6
SIGNAL PEAK SNOTEL	8360	---	--	---	0.0	--
Silver Creek Divide	9070	N O	S U R V E Y		14.2E	10.4**
SILVER CREEK SNOTEL	9070	4/1	--	24.8	14.2	--
State Line	8000	3/30	15	5.3	0.0	1.1
Whitewater (A)	10750	3/29	142	45.4	36.1	20.6**
<u>VERDE RIVER</u>						
Baker Butte	7330	3/30	36	14.8	3.6	4.2**
BAKER BUTTE SNOTEL	7330	4/1	--	16.5	4.7	--
Baker Butte #2	7700	3/30	73	28.6	18.8	10.2**
Camp Wood	5700	3/27	0	0.0	0.0	0.1
Chalender *	7100	3/30	7	1.4	2.6	1.6
Copper Basin Divide	6720	3/30	2	0.8	0.0	0.8
Fort Valley	7350	3/30	8	2.7	0.4	1.3
FRY SNOTEL	7200	4/1	--	9.2	2.9	--
Gaddes Canyon	7600	3/30	46	16.3	11.4	4.7
Happy Jack	7630	3/30	26	9.6	4.8	2.3
Iron Springs *	6200	3/30	0	0.0	0.0	0.2
Mingus Mountain	7100	3/30	5	1.3	0.0	0.5
Mormon Lake *	7350	3/29	26	8.8	2.7	2.7
Mormon Mountain	7500	3/29	42	14.9	9.3	4.3
MORMON MOUNTAIN SNOTEL	7500	4/1	--	14.2	10.6	--
Mormon Mtn. Summit #2	8470	3/29	88	33.0	25.8	--
Newman Park	6750	3/29	12	3.7	0.0	1.3
Snow Bowl #1	10260	3/30	72	22.9	22.5	10.8
Snow Bowl #2	11000	3/30	105	33.2	29.5	18.6**
SUGAR LOAF SNOTEL	6120	4/1	--	0.0	0.0	--
White Horse Lake Jct.	7180	3/30	16	5.6	2.3	2.1**
WHITE HORSE LAKE SNOTEL	7180	4/1	--	9.5	3.1	--
White Spar	6000	3/30	0	0.0	0.0	0.2
† 1963-77 15-year period. (*) Adjacent drainage. (**) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is preliminary. E = Estimate or correlation						



**SNOW** ABOUT APRIL 1, 1983

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<u>LITTLE COLORADO RIVER</u>						
Baldy	9220	3/30	46	16.8	8.9	6.0
BALDY SNOTEL	9220	4/1	--	17.9	9.8	---
Canyon Creek	7500	3/31	15	4.8	0.4	2.2
Canyon Point	7600	3/31	20	7.1	0.0	2.3**
Cheese Springs	8600	3/30	28	7.4	6.4	5.3**
Forest Dale	6430	N O	S U R V E Y		0.0	0.2
Ft. Apache	9160	3/30	50	15.8	8.4	6.3
Fort Valley	7350	3/30	8	2.7	0.4	1.3
Happy Jack	7630	3/30	26	9.6	4.8	2.3
Heber	7640	3/30	14	5.4	0.9	2.3
HEBER SNOTEL	7640	4/1	--	4.6	0.4	---
Lake Mary	6970	3/29	9	3.4	0.4	---
McNary	7225	N O	S U R V E Y		0.0	1.1
MCNARY SNOTEL	7225	---	--	---	0.0	---
Mormon Lake	7350	3/29	26	8.8	2.7	2.7
Mormon Mountain	7500	3/29	42	14.9	9.3	4.3
MORMON MOUNTAIN SNOTEL	7500	4/1	--	14.2	10.6	---
Mormon Mtn. Summit #2	8470	3/29	88	33.0	25.8	---
Nutriosos *	8500	3/30	8	2.3	0.0	0.9
Promontory Butte	7900	3/31	75	28.5	19.2	10.7**
PROMONTORY SNOTEL	7900	4/1	--	33.2	---	---
Snow Bowl #1	10260	3/30	72	22.9	22.5	10.8
Snow Bowl #2	11000	3/30	105	33.2	29.5	18.6**
Wilson Lake	9000	N O	S U R V E Y		15.2	8.9**
† 1963-77 15-year average. (*) Adjacent drainage. (**) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is preliminary.						

**SNOW ABOUT MARCH 15, 1983**

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<b>SALT RIVER</b>						
Baldy *	9220	3/15	35	11.5	7.4	7.3
BALDY SNOTEL	9220	3/15	--	14.1	9.5	---
Beaver Head	8000	3/14	17	5.5	1.4	2.4
BONITA ROCK SNOTEL	8270	---	--	---	12.5	---
Canyon Creek	7500	3/14	8	3.1	1.1	3.5
Canyon Point	7600	3/14	11	4.5	2.3	3.9**
Coronado Trail	8400	3/14	14	5.2	1.1	2.4
CORONADO TRAIL SNOTEL	8400	3/15	--	3.9	1.2	---
Forest Dale	6430	N O	S U R V E Y		0.5	0.5
Ft. Apache	9160	3/15	37	11.9	8.1	7.8
Hannagan Meadows	9090	3/14	52	18.2	12.3	9.0**
HANNAGAN MEADOWS SNOTEL	8960	3/15	--	21.5	11.9	---
Hawley Lake	8250	N O	S U R V E Y		11.9	6.7**
HAWLEY LAKE SNOTEL	8250	---	--	---	11.1	---
Heber	7640	3/14	7	2.8	2.0	3.8
HEBER SNOTEL	7640	3/15	--	2.6	0.0	---
Maverick Fork (Aerial)	9050	3/15	38	12.5	---	9.1
MAVERICK FORK SNOTEL	9200	3/15	--	17.2	9.7	---
McNary	7225	N O	S U R V E Y		1.0	2.0
MCNARY SNOTEL	7225	---	--	---	0.0	---
Milk Ranch	7000	N O	S U R V E Y		0.6	0.8
Mt. Ord (A)	11000	N O	S U R V E Y		---	---
Nutriososo *	8500	3/14	5	1.5	0.9	1.5
Promontory Butte	7900	3/15	55	21.4	14.9	12.7**
PROMONTORY SNOTEL	7900	3/15	--	27.8	---	---
Smith Cienega (A)	9850	N O	S U R V E Y		---	---
Sunrise Summit	10600	N O	S U R V E Y		16.4	14.6**
Wilson Lake	9000	N O	S U R V E Y		11.5	10.5**
Workman Creek	6900	3/14	19	6.9	2.8	5.4
WORKMAN CREEK SNOTEL	6900	3/15	--	11.9	2.0	---
<b>LOWER COLORADO RIVER</b>						
Bill Williams Intermediate	8550	3/14	52	19.7	---	8.9**
Bill Williams Summit	8950	3/14	60	20.5	---	11.5**
Bright Angel	8400	3/14	46	15.5	---	---
Chalender*	7100	3/14	5	2.2	3.6	2.6
Fort Valley	7350	3/15	5	1.8	0.4	2.0
Grand Canyon	7500	3/14	3	1.8	0.6	1.4
Williams Ski Run	7720	3/14	38	14.3	15.0	8.0**

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is preliminary. E = Estimate.

**SNOW ABOUT MARCH 15, 1983**

SNOW		ABOUT MARCH 15, 1983		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)			
NAME	Elevation				Last Year	Average †		
<u>GILA RIVER</u>								
Bear Wallow	8100	3/14	15	6.0	3.0	4.2		
Beaver Head	8000	3/14	17	5.5	1.4	2.4		
Coronado Trail	8400	3/14	14	5.2	1.1	2.4		
CORONADO TRAIL SNOTEL	8400	3/15	--	3.9	1.2	---		
Emory Pass #2	7800	3/14	4	1.6	0.0	1.1**		
Frisco Divide	8000	3/14	9	2.7	1.1	1.9		
FRISCO DIVIDE SNOTEL	8000	3/15	--	1.4	1.1	---		
Hannagan Meadows *	9090	3/14	52	18.2	12.3	9.0**		
HANNAGAN MEADOWS SNOTEL	8960	3/15	--	21.5	11.9	---		
Hummingbird (A)	10550	NOT SCHEDULED			---	16.3**		
LOOKOUT MOUNTAIN SNOTEL	8150	3/15	--	0.0	0.0	---		
McKnight Cabin * (A)	9300	NOT SCHEDULED			---	3.5**		
Mogollon	7000	N O S U R V E Y			0.0	0.4		
Nutrioso	8500	3/14	5	1.5	0.9	1.5		
Redstone Trail	8600	N O S U R V E Y			8.4	7.1		
Rose Canyon	7300	3/14	8	3.4	1.1	1.9		
SIGNAL PEAK SNOTEL	8360	---	--	---	5.2	---		
Silver Creek Divide	9070	N O S U R V E Y			11.9	10.8**		
SILVER CREEK SNOTEL	9070	3/15	--	19.7	14.5	---		
State Line	8000	3/14	15	4.8	1.0	1.9		
Whitewater (A)	10750	NOT SCHEDULED			---	19.7**		
<u>VERDE RIVER</u>								
Baker Butte	7330	3/14	27	10.8	3.4	6.0**		
BAKER BUTTE SNOTEL	7330	3/15	--	13.3	3.3	---		
Baker Butte #2	7700	3/14	62	23.1	15.9	12.1**		
Camp Wood	5700	3/14	0	0.0	0.0	0.4		
Chalender *	7100	3/14	5	2.2	3.6	2.6		
Copper Basin Divide	6720	3/14	0	0.0	0.9	1.6		
Fort Valley	7350	3/15	5	1.8	0.4	2.0		
FRY SNOTEL	7200	3/15	--	8.1	2.6	---		
Gaddes Canyon	7600	3/14	35	13.9	11.4	5.6		
Happy Jack	7630	3/14	18	7.1	7.1	3.4		
Iron Springs *	6200	3/14	0	0.0	0.3	0.4		
Mingus Mountain	7100	3/14	0	0.0	0.5	0.9		
Mormon Lake *	7350	3/14	9	3.6	2.6	4.2		
Mormon Mountain	7500	3/14	21	8.8	8.2	5.8		
MORMON MOUNTAIN SNOTEL	7500	3/15	--	9.3	8.4	---		
Mormon Mtn. Summit #2	8470	NOT SCHEDULED			---	---		
Newman Park	6750	3/14	0	0.0	0.7	1.9		
Snow Bowl #1	10260	3/14	55	17.9	16.5	10.2		
Snow Bowl #2	11000	3/14	76	23.9	23.5	17.0**		
SUGAR LOAF SNOTEL	6120	3/15	--	0.0	0.0	---		
White Horse Lake Jct.	7180	3/14	8	2.3	2.6	3.2**		
WHITE HORSE LAKE SNOTEL	7180	3/15	--	8.9	3.3	---		
White Spar	6000	3/14	0	0.0	0.4	0.5		

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is preliminary. E = estimate.



**SNOW** ABOUT MARCH 15, 1983

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Elevation				Last Year	Average †
<u>LITTLE COLORADO RIVER</u>						
Baldy	9220	3/15	35	11.5	7.4	7.3
BALDY SNOTEL	9220	3/15	--	14.1	9.5	---
Canyon Creek	7500	3/14	8	3.1	1.1	3.5
Canyon Point	7600	3/14	11	4.5	2.3	3.9**
Cheese Springs	8600	3/15	20	6.2	7.3	6.9**
Forest Dale	6430	N O	S U R V E Y		0.5	0.5
Ft. Apache	9160	3/15	37	11.9	8.4	7.8
Fort Valley	7350	3/15	5	1.8	0.4	2.0
Happy Jack	7630	3/14	18	7.1	7.1	3.4
Heber	7640	3/14	7	2.8	2.0	3.8
HEBER SNOTEL	7640	3/15	--	2.6	0.0	---
Lake Mary	6970	3/14	1	0.2	0.9	---
McNary	7225	N O	S U R V E Y		1.0	2.0
MCNARY SNOTEL	7225	---	--	---	0.0	---
Mormon Lake	7350	3/14	9	3.6	2.6	4.2
Mormon Mountain	7500	3/14	21	8.8	8.2	5.8
MORMON MOUNTAIN SNOTEL	7500	3/15	--	9.3	8.4	---
Mormon Mtn. Summit #2	8470	NOT SCHEDULED			---	---
Nutriosos *	8500	3/14	5	1.5	0.9	1.5
Promontory Butte	7900	3/15	55	21.4	14.9	12.7**
PROMONTORY SNOTEL	7900	3/15	--	27.8	---	---
Snow Bowl #1	10260	3/14	55	17.9	16.5	10.2
Snow Bowl #2	11000	3/14	76	23.9	23.5	17.0**
Wilson Lake	9000	N O	S U R V E Y		11.5	10.5**

† 1963-77 15-year period. (\*) Adjacent drainage. (\*\*) 1963-77 Adjusted Average. (A) Aerial observation: water content estimated. Snotel data is preliminary.

## PRECIPITATION (Inches) ABOUT APRIL 1, 1983

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX. NOV. 1 TO DATE		
		Date of Reading	Month's Precipitation	Average †	This Year	Average †	Percent of Average
<u>GILA RIVER</u>							
Silver Creek Divide	9000	---	---	2.84*	---	13.35	---
Hannagan Meadows **	9030	---	---	2.31	---	11.90	---
Frisco Divide **	8000	3/30	3.15	1.32	13.63	5.85	233
<u>SALT RIVER</u>							
Canyon Point	7600	3/31	8.94	3.82*	32.32	16.45	196
Hannagan Meadows **	9030	---	---	2.31	---	11.90	---
Little Wildcat (Heber Snow Course)	7600	3/30	6.88	3.20	26.05	14.38	181
Maverick Fork	9050	---	---	2.57	---	12.47	---
Workman Creek **	6970	3/30	10.81	3.50	29.62	16.69	177
Wilson Lake	9100	---	---	3.18*	---	12.14	---
<u>VERDE RIVER</u>							
Baker Butte	7300	3/30	7.97	3.45*	33.16	15.82	210
Copper Basin Divide	6720	3/30	7.02	3.01	21.88	11.90	184
Fort Valley **	7350	3/30	4.16	2.20	18.09	8.86	204
Happy Jack **	7480	3/30	5.33	2.66	26.31	12.02	219
Mingus Mountain	7660	3/30	6.59	2.46	24.30	9.71	250
Mormon Mountain	7500	---	---	3.94	---	17.14	---
White Horse Lake Jct.**	7150	3/30	7.10	3.37	---	14.58	---
<u>LITTLE COLORADO</u>							
Greer Lakes	8500	3/30	2.60	1.41	9.43	6.40	147
Little Wildcat (Heber Snow Course)	7600	3/30	6.88	3.20	26.05	14.38	181
Sheep Crossing (Baldy Snow Course)	9125	3/30	5.90	2.61	18.68	11.48	163
† 1963-77 Average							
* Adjusted Average							
** Data Supplied by U.S. Forest Service							

## PRECIPITATION (Inches) ABOUT APRIL 1, 1983 (SNOTEL SITES)

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX. NOV. 1 TO DATE		
		Date of Reading	Month's Precipitation	Average +	This Year	Average +	Percent of Average
<u>GILA RIVER</u>							
Coronado Trail	8400	4/1	5.3	---	17.7	---	---
Hannagan Meadows	8960	4/1	7.6	---	26.2	---	---
Frisco Divide	8000	4/1	2.9	---	13.2	---	---
Silver Creek Divide	9000	4/1	8.4	---	28.1	---	---
Lookout Mountain	8150	4/1	3.3	---	15.7	---	---
Signal Peak	8360	---	---	---	---	---	---
<u>SALT RIVER</u>							
Promontory Butte	7930	---	---	---	---	---	---
Heber	7640	4/1	7.5	---	28.5	---	---
Hawley Lake	8250	---	---	---	---	---	---
McNary	7200	---	---	---	---	---	---
Bonita Rock	8270	---	---	---	---	---	---
Hannagan Meadows	8960	4/1	7.6	---	26.2	---	---
Maverick Fork	9050	4/1	6.1	---	24.1	---	---
Coronado Trail	8400	4/1	5.3	---	17.7	---	---
Workman Creek	6900	4/1	13.0	---	42.2	---	---
<u>VERDE RIVER</u>							
White Horse Lake Jct.	7180	4/1	6.2	---	25.2	---	---
Fry	7200	4/1	6.3	---	27.1	---	---
Mormon Mountain	7500	4/1	8.2	---	32.1	---	---
Sugar Loaf	6120	---	---	---	---	---	---
Baker Butte	7300	4/1	7.7	---	33.7	---	---
<u>LITTLE COLORADO</u>							
Baldy	9125	4/1	6.2	---	20.1	---	---
McNary	7200	---	---	---	---	---	---
Heber	7640	4/1	7.5	---	28.5	---	---
Promontory Butte	7930	---	---	---	---	---	---
Snotel data preliminary							



SNOW COURSE

Agassiz  
Baker Butte #1 & #2  
Baldy #1  
Baldy #2  
Bear Wallow  
Beaver Head  
  
Bill Williams Intermediate  
Bill Williams Summit  
Bright Angel  
  
Camp Wood  
Canyon Creek  
Canyon Point  
Chalender  
  
Cheese Springs  
Copper Basin Divide  
Coronado Trail  
  
Emory Pass #2  
Forest Dale  
Ft. Apache  
Ft. Valley  
  
Frisco Divide  
Gaddes Canyon  
Grand Canyon  
Hannagan Meadows  
  
Happy Jack  
Hawley Lake  
Heber  
Hummingbird  
Inner Basin #1 (Bear Paw)  
Inner Basin #2 (Snowslide)  
Iron Springs  
Lake Mary  
Maverick Fork  
McKnight Cabin  
McNary  
Milk Ranch  
Mingus Mountain  
Mogollon  
Mormon Lake  
Mormon Mountain  
Mormon Mountain Summit  
Newman Park  
Nutrioso  
  
Promontory Butte

SNOW SURVEYORS DURING 1983 SEASON

SCS - Alam  
SCS - Jones, Nelson, Hansen  
SCS - Wood, Thompson, Williams  
SCS - Thompson, Williams  
Coronado N.F. - Aydelotte, Nelson, Trent, Lelo, Lindaman  
Apache-Sitgreaves N.F. - Bonomo, Hall, Vahle, Lee, Romisch, Sanders  
Kaibab N.F. - Lomeli, Shock, Santana, Jorgensen, Orozco  
Kaibab N.F. - Lomeli, Jorgenson, Santana, Orozco  
National Park Service - B. Pferdeort, J. Pferdeort, Jackson  
Prescott N.F. - Ewlberg  
SCS - Jones  
SCS - Jones  
Kaibab N.F. - Jorgensen, Lomeli, Orozco, Kramer, Richardson, Dawson  
SCS - Wood, Thompson, Williams  
SCS - Jalving, Carmichael  
Apache-Sitgreaves N.F. - Bonomo, Hall, Vahle, Sanders, Romisch  
SCS - Bray, Garcia, Adkins  
Bureau of Indian Affairs - Grippen  
SCS - Wood, Thompson, Williams  
NSFS - Rocky Mountain Forest and Range Experiment Station  
Gila N.F. - Gibbons, Cordts  
SCS - Lidbeck (contract)  
National Park Service - Van Sice, King, Faust, Aubin  
Apache-Sitgreaves N.F. - Bonomo, Vahle, Hall, Sanders, Lee, Romisch  
Coconino N.F. - Allred, Polequira, Quanimptpwa, Jenner  
Bureau of Indian Affairs - Grippen  
SCS - Jones  
SCS - Bishop, Ewan, West (contract)  
SCS - Alam, Middleton  
SCS - Alam, Middleton  
SCS - Jalving, Carmichael  
SCS - Alam, Middleton, Seery, Roberts, McKeown  
SCS - Wood, Thompson, Williams  
SCS - Bray, Adkins; Bishop, Ewan, West (contract)  
Bureau of Indian Affairs - Grippen  
Bureau of Indian Affairs - Grippen  
SCS - Lidbeck (contract)  
SCS  
SCS - Alam, Middleton, Seery, Roberts  
SCS - Alam, Middleton, Seery, Roberts, McKeown  
SCS - Alam, Seery  
SCS - Alam, Middleton, Seery, Roberts, McKeown  
Apache-Sitgreaves N.F. - Bonomo, Hall, Lee, Vahle, Sanders, Romisch  
SCS - Jones

SNOW COURSE

Redstone Trail  
Rose Canyon  
Silver Creek Divide  
Snow Bowl #1 and #2  
State Line  
Sunrise Summit  
White Horse Lake Jct.

White Spar  
Whitewater Baldy  
Williams Ski Run

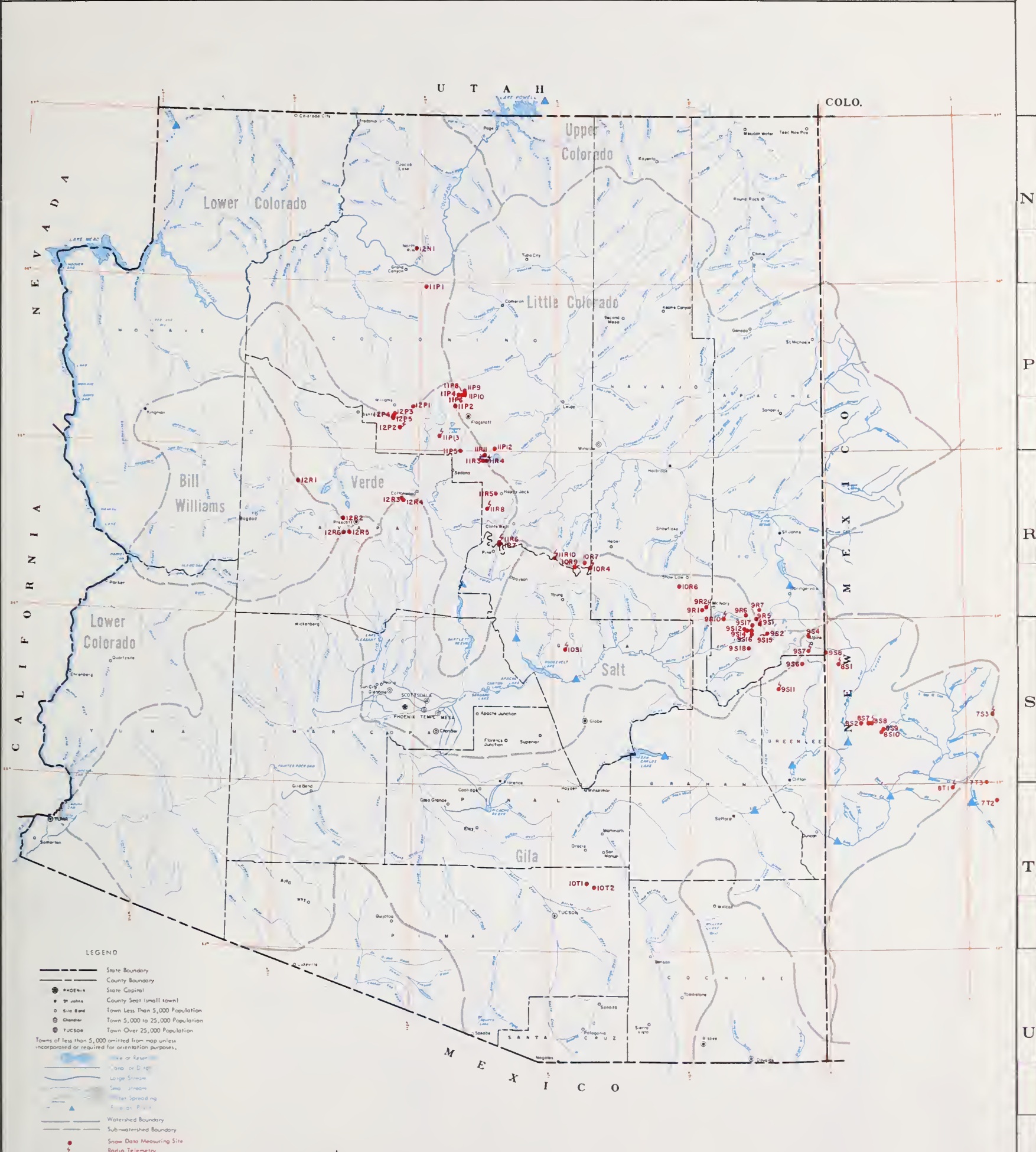
Wilson Lake  
Workman Creek

SNOW SURVEYORS DURING 1983 SEASON

SCS  
Coronado N.F. - Aydelotte, Trent, Nelson, Lindaman  
SCS  
Coconino N.F. - Holden, Jacobs  
Gila N.F. - Gibbons, Cordts  
SCS - Wood, Thompson, Williams  
Kaibab N.F. - Lomeli, Rowe, Jorgensen, Orozco,  
Shock, Christian  
SCS - Jalving, Carmichael  
SCS - Bishop, Ewan, West (contract)  
Kaibab N.F. - Lomeli, Rowe, Jorgensen, Orozco, Santana,  
Christman  
SCS - Wood, Thompson, Williams  
USFS - Rocky Mountain Forest and Range Experiment  
Station







SNOW COURSES AND RELATED  
DATA MEASURING SITES  
ARIZONA  
1983

SCALE 1:3,660,000  
ALBERS EQUAL AREA PROJECTION

USGS National Atlas 1:1,000,000 Albers  
Equal-Area projection (1967) used as source  
for base map and adapted for SCS use.

# INDEX TO SNOW COURSES

NUMBER	NAME	SEC.	TWP.	RGE.	ELEV.	DRAINAGE	OBSERVER	RECORD BEGAN
11P10A	Agassiz	32	23N	7E	11200	Little Colorado	SCS-CF*	1968
11R6PSPRT	Baker Butte	4	12N	9E	7300	Verde	SCS	1966
11R7	Baker Butte #2	9	12N	9E	7700	Verde	SCS	1971
9S1APSPRT	Baldy	28	7N	27E	9125	Little Colorado	SCS	1950
9S15	Baldy #2	12	6N	26E	9750	Little Colorado	SCS	1963
9S16	Baldy #3	13	6N	26E	10950	Little Colorado	SCS	1963
10T1	Bear Wallow	6	12S	16E	8100	Gila	FS	1948
9S6	Beaver Head	13	4N	30E	8000	San Francisco	FS	1938
12P5	Bill William Intermediate	17	21N	2E	8550	Cataract	FS	1967
12P4	Bill Williams Summit	17	21N	2E	8950	Verde	FS	1967
9S18PSPRT	Bonito Rock		5N	26E	8270	Salt	SCS	1979
12N1	Bright Angel	34	33N	3E	8400	Bright Angel Creek	NPS	1947
12R1	Camp Wood	3	16N	6W	5700	Verde	FS	1946
10R7	Canyon Creek #2	18	11N	15E	7500	Little Colorado	SCS	1958
10R9P	Canyon Point	28	11N	14E	7600	Salt	SCS	1967
12P1	Chalender	27	22N	3E	7100	Verde	FS	1947
9R7	Cheese Springs	28	8N	27E	8600	Little Colorado	SCS	1969
12R6P	Copper Basin Divide	23	13N	3W	6720	Verde	SCS	1963
9S7PSPRT	Coronado Trail	26	5N	30E	8000	San Francisco	FS	1938
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres	SCS	1967
11P13PSPRT	Fry	35	20N	5E	7220	Verde	SCS	1978
10R6	Forest Dale	2	9N	21E	6430	Salt	BIA	1939
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado	SCS	1951
11P2P	Ft. Valley	22	22N	6E	7350	Little Colorado	FS	1947
8S1PSPRT	Frisco Divide	31	6S	20W**	8000	San Francisco	FS	1938
12R4	Gaddes Canyon	11	15N	2E	7600	Verde	SCS	1954
11P1	Grand Canyon	21	30N	4E	7500	Hance Creek	NPS	1947
9S11PSPRT	Hannagan Meadows	19	3N	29E	9090	San Francisco	FS	1964
11R5P	Happy Jack	30	16N	9E	7630	Verde	FS	1951
9R10PSPRT	Hawley Lake	13	7N	24E	8300	Salt	BIA	1966
10R4PSPRT	Heber	28	11N	15E	7600	Little Colorado	SCS	1950
8S9A	Hummingbird	19	11S	17W**	10550	Gila	SCS	1964
11P9P	Inner Basin #1	28	23N	7E	10000	Little Colorado	SCS-CF*	1967
11P8P	Inner Basin #2	28	23N	7E	9750	Little Colorado	SCS	1967
12R2	Iron Springs	22	14N	3W	6200	Little Colorado	SCS	1946
11P12	Lake Mary	21	19N	9E	6930	Little Colorado	SCS	1975
7S3PSPRT	Lookout Mountain	1	10S	10W	8500	Gila	SCS	1978
9S2APSPRT	Maverick Fork	13	6N	27E	9150	Salt	SCS	1950
7T3A	McKnight Cabin	10	15S	10W**	9300	Mimbres	SCS	1967
9R2PSPRT	McNary	23	8N	23E	7200	Salt	BIA	1939
9R1	Milk Ranch	33	8N	23E	7000	Salt	BIA	1941
12R3	Mingus Mountain	3	15N	2E	7100	Verde	SCS	1947
8S2	Mogollon	2	11S	19W**	7000	San Francisco	SCS	1953
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado	SCS	1947
11R3APSPRT	Mormon Mountain	14	18N	8E	7500	Verde	SCS	1950
11R11	Mormon Mountain Summit #2	2	18N	8E	8470	Little Colorado	SCS	1975
9S12A	Mt. Ord	4	6N	26E	11200	Salt	SRP-SCS	1966
11P5	Newman Park	25	19N	6E	6750	Verde	SCS	1963
9S4	Nutriso	23	6N	30E	8500	San Francisco	FS	1938
11R10PSPRT	Promontory Butte	5	11N	13E	7930	Little Colorado	SCS	1973
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco	SCS	1961
10T2	Rose Canyon	15	12S	16E	7300	Gila	FS	1948
8T1PSPRT	Signal Peak	13	16S	13W	8360	Gila	SCS	1977
8S8PSPRT	Silver Creek Divide	4	11S	18W**	9000	San Francisco	SCS	1964
9S14A	Smith Cienega	10	6N	26E	10050	Salt	SRP-SCS	1966
11P4	Snow Bowl #1	36	23N	6E	10260	Verde	FS	1961
11P6	Snow Bowl #2	31	23N	7E	11000	Verde	FS	1965
9S8	State Line	6	6S	21W**	8000	San Francisco	FS	1938
9S17	Sunrise Summit	36	7N	26E	10600	Salt	SCS	1972
11R8PSPRT	Sugarloaf	8	8E	14N	6120	Verde	SCS	1978
12P2PSPRT	White Horse Lake Jct.	2	20N	2E	7180	Verde	FS	1967
12R5	White Spar	19	13N	2W	6000	Verde	SCS	1963
8S10A	Whitewater	19	11S	17W**	10750	Gila	SCS	1964
12P3	Williams Ski Run	9	21N	2E	7720	Cataract	FS	1967
9R6P	Wilson Lake	4	7N	26E	9000	Salt	SCS	1966
10S1PSPRT	Workman Creek	33	6N	14E	6900	Salt	FS	1952

A Aerial Snow Depth Marker  
P Precipitation Storage Gage  
R Radio Telemetry (SNOTEL)

SP Snow Pressure Pillow  
T Temperature  
\*\* NM Principal Meridian  
\* City of Flagstaff



# ***The Following Organizations Cooperate in the Arizona Snow Survey Work***

## **FEDERAL**

Department of Agriculture  
Soil Conservation Service  
Forest Service  
    Apache-Sitgreaves Forest  
    Coconino Forest  
    Coronado Forest  
    Gila Forest  
    Kaibab Forest  
    Prescott Forest  
    Rocky Mountain Forest and Range  
        Experiment Station  
    Tonto Forest  
Department of Commerce  
    NOAA, National Weather Service  
Department of Interior  
    Bureau of Reclamation  
        Region III  
    Geological Survey  
        Arizona District  
        New Mexico District  
    Bureau of Indian Affairs  
        Fort Apache Reservation  
        San Carlos Irrigation Project  
    National Park Service  
        Grand Canyon National Park  
Gila Water Commissioner  
    Safford, Arizona

## **STATE**

Arizona Game and Fish Department  
  
Arizona State Parks Board  
  
Arizona Department of Water Resources  
  
University of Arizona  
    Arizona Agricultural Experiment Station  
    Water Resource Research Center  
    Department of Watershed Management

## **MUNICIPAL**

City of Flagstaff

## **IRRIGATION PROJECTS**

Salt River Valley Water User's Association  
    Phoenix, Arizona  
San Carlos Irrigation and Drainage District  
    Coolidge, Arizona  
Maricopa County Municipal Water Conservation District  
    Peoria, Arizona

## **PRIVATE**

Southwest Forest Industries, Inc.  
    Phoenix, Arizona  
Fort Apache Indian Reservation  
    White Mountain Recreation Enterprises

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
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**FIRST CLASS MAIL**

## FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Furnishes the basic data  
necessary for forecasting  
water supply for irrigation,  
domestic and municipal water  
supply, hydro-electric power  
generation, navigation,  
mining and industry

*"The Conservation of Water begins  
with the Snow Survey"*